



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/795,844	03/08/2004	Jose Luis Moctezuma De La Barrera	29997/050	1273		
29471	7590	03/06/2009	EXAMINER			
MCCRACKEN & FRANK LLP 311 S. WACKER DRIVE SUITE 2500 CHICAGO, IL 60606				BOR, HELENE CATHERINE		
ART UNIT		PAPER NUMBER				
3768						
MAIL DATE		DELIVERY MODE				
03/06/2009		PAPER				

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/795,844	MOCTEZUMA DE LA BARRERA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	HELENE BOR	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 11 December 2008.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-56, 58, 59 and 61-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-56, 58-59, 61-64 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Objections*

2. Claim 51 objected to because of the following informalities: The claim is missing "comprising" or some other word such as wherein, etc. –The light source of claim 41 comprising means for automatically moving the light source–. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. Claim 1, 33 & 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US Patent No. 6,314,311 B1).

**Claim 1, 33 & 38:** Williams teaches a light source to illuminate a field of interest comprising: an illumination module (Figure 2, Element 230) comprising a series of digital light projectors (Col. 5, Line 31) capable of projecting illumination light to the field of interest (Col. 5, Line 18-22); a light projector associated with the illumination module an input device associated with the light projector (Figure 2, Element 234); the input device (Figure 2, Element 220) capable of sending signals to the light projector such that the light projector simultaneously projects data light along with the illumination light to the field of interest (Col. 5, Line 59-64) and capturing surface data within the field of interest (Col. 4, Line 17-22). Williams teaches the projector is capable of projecting one or more beams of light and one or more wavelengths are selected from the visible spectrum and other wavelengths such as infrared (Col. 4, Line 56 – Col. 5, Line 4).

Williams fails to teach the brightness of the light, however, he does teach the importance of viewing aids for infrared light for making the infrared brighter (Col. 5, Line 1-4). It would have been obvious to one of ordinary skill in the art based on the teachings of Williams to have the light of interest be brighter than the ambient light in order for the user to see the light and view the data (Col. 5, Line 1-4).

4. Claim 2-32, 34-36, 39, 41-50, 52-56, 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US Patent No. 6,314,311 B1) as applied to claims 1, 33, 38 & 41 above and further in view of Dumoulin (US Patent No. 5,528,612).

**Claim 2-3, 11, 13-14, 20-22, 25-26, 41, 43-45, 52, 56 & 58:** Williams teaches the light source where the data light displays the location of an instrument relative to a point within the field of interest relative to the surgical approach (Col. 6, Line 30-37). Williams teaches the light source wherein the field of interest is a surgical field (Col. 1, Line 5-6). Williams teaches a planned interventional procedure (Col. 3, Line 36). Williams fails to disclose the specifics of the planned interventional procedure, however, Dumoulin discloses developing a surgical plan and playing back the plan during surgery (Col. 6, Line 19-27). It would have been obvious to one of ordinary skill in the art to modify Williams to include the surgical planning as taught by Dumoulin in order to aid physicians in surgery (Col. 2, Line 25-31).

**Claim 4-7:** Williams teaches the light source that includes a camera system to determine the location of an object within the surgical field (Col. 2, Line 4-7) and the light source that includes a surface scanning module (Figure 3, Element 400). Williams teaches the light source wherein the surface scanning module includes a camera

system to facilitate video optical scanning and localization of objects based on the scan information (Col. 6, Line 49-53). Williams teaches the light source that includes at least one video camera to facilitate video-optical scanning (Col. 6, Line 38-41).

**Claim 8-10:** Williams teaches the light source where the camera system can detect infrared light [IR cameras] from markers placed within the surgical field (Col. 6, Line 38-59). Williams teaches the light source where the markers emit infrared light reflect infrared light (Col. 6, Line 38-59).

**Claim 12:** Williams teaches the light source where the surgical target was determined pre-operatively from a pre-operative scan (Col. 3, Line 36-60).

**Claim 15:** Williams teaches the light source where the data light displays anatomical structures [biopsy site] (Claim 13 & Col. 6, Line 34-37).

**Claim 16-19:** Williams teaches the light source where the data light displays physiological data (Col. 6, Line 17-27) also includes respiration rate (Col. 6, Line 26-27).

**Claim 23 & 55:** Williams teaches the light source where the data light automatically updates the displays based on the position of the instrument within the surgical field (Claim 15).

**Claim 24:** Williams teaches the light source where the data light is displayed using digital light projection (Col. 5, Line 18-22).

**Claim 27 & 47:** Williams teaches the light source where the data light displays information in a three dimensional form (Col. 4, Line 63).

**Claim 28 & 46:** Williams teaches the light source where the light projector comprises a matrix of light projection devices [CCD array] (Col. 6, Line 41) or [1x2 matrix sensor

shown in Figure 3, Element 410].

**Claim 29:** Williams teaches the light source where the light projector is capable of projecting colored light (Col. 5, Line 29-37).

**Claim 30-32:** Williams teaches the light source that includes an adjustable support structure with automatic or remote control (Col. 6, Line 60- Col. 7, Line 3).

**Claim 34:** Williams teaches the light source wherein the data light is projected onto a reflective surface associated with a surgical field (Col. 5, Line 13-17).

**Claim 35-36, 48-49 & 59:** Williams teaches the light source wherein visual information delivered by the data light is manipulated to conform to the shape of the surface and changes made to the surface onto which the visual information is projected (Col. 4, Line 43-55).

**Claim 39:** Williams teaches the light source where the computer is connected to a network [such as another imaging device] (Figure 2, Element 110, 120, 140, 210 & 220).

**Claim 51 & 61:** Williams teaches the light source wherein the light source is automatically moved to optimize the line of sight or the projection of the light (Figure 3, Line 430).

**Claim 53:** William teaches the method that includes the step of registering the surface data to the data projected from the light projection module (Figure 1, Element 200).

**Claim 54:** Williams teaches the method that includes the step of tracking the location of the surface data (Col. 6, Line 17-28).

5. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US Patent No. 6,314,311 B1) and Dumoulin (US Patent No. 5,528,612) as applied to claims 1, 33 & 38 above and further in view of Swindler (US Patent No. 5,424,913).

**Claim 40:** Williams teaches the light source where the light source has control code [inherent in a CPU] and the code is capable of being upgradeable as are CPUs (Figure 2, Element 220) however Williams does not specifically teach upgradeable software. Swindler teaches upgrading CPUs over the lifetime of the computer. It would have been obvious to one of ordinary skill in the art to modify the system of Williams to include CPUs capable of upgrades as taught by Swindler since it applies a known technique [upgrading] to a known device [CPU] for improvements to yield predictable results [bug fixes, security updates, new features etc].

6. Claim 37, 51, 62 & 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US Patent No. 6,314,311 B1) and Dumoulin (US Patent No. 5,528,612) as applied to claims 1-36, 38-39, 41-50, 52-56, 58-59 above and further in view of Cambier et al. (US Patent No. 5,159,361).

**Claim 37, 51, 62 & 64:** Williams fails to teach calibrating the instrument, however, Cambier teaches the light source wherein the data light is calibrated by stereophotogrammetry using a calibration pattern (Col. 39, Line 10-20) to correct distortions (Col. 40, Line 40-46). It would have been obvious to one of ordinary skill in the art to modify the system of Williams to include calibrating as taught by Cambier to correct distortions (Col. 40, Line 40-46).

***Response to Arguments***

7. Applicant's arguments, see Page 11, filed 12/11/2009, with respect to the Claim Objection have been fully considered and are persuasive. The Claim Objection of Claim 19 has been withdrawn.
8. Applicant's arguments with respect to claim 1-56, 58-59 & 61-64 have been considered but are moot in view of the new ground(s) of rejection. However, the remaining relevant arguments will be addressed. The Applicant submitted the argument that Williams does not teach the surface scanning module. The Examiner contends the surface scan module is broad enough to be interpreted to read on the disclosure of Williams. The Applicant submitted the argument that Williams does not teach displaying physiological data. The Examiner contends that Williams does displaying physiological data and if the Applicant intends to claim numerical displays then the claims should be amended to claim so. The Applicant submitted arguments that Williams does not suggest automatic or remote control adjustment of the support structure and that the reflector needs to be in the within the surgical field. The Examiner contends that the automatic adjustment of the reflector is adjustment of the support structure and that Claim 34 only claims a loose association with the surgical field not a direct relationship.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE BOR whose telephone number is (571)272-2947. The examiner can normally be reached on M-T 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./  
Examiner, Art Unit 3768

/Eric F Winakur/  
Primary Examiner, Art Unit 3768